

# Alibaba Cloud Object Storage Service

Product Introduction

Issue: 20180807

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# Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 <b>Danger:</b> Resetting will result in the loss of user configuration data.
	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 <b>Warning:</b> Restarting will cause business interruption. About 10 minutes are required to restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 <b>Note:</b> Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 <b>Note:</b> You can use <b>Ctrl + A</b> to select all files.
>	Multi-level menu cascade.	<b>Settings &gt; Network &gt; Set network type</b>
<b>Bold</b>	It is used for buttons, menus, page names, and other UI elements.	Click <b>OK</b> .
Courier font	It is used for commands.	Run the <code>cd /d C:/windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	It indicates that it is a optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>
{ } or {a b}	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand / slave}</code>

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# 1 What is OSS

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Alibaba Cloud Object Storage Service (OSS) is a storage service that enables you to store, back up, and archive any amount of data in the cloud. OSS is a cost-effective, highly secure, and highly reliable cloud storage solution. It uses RESTful APIs and is designed for 99.999999999% (11 nines) durability and 99.99% availability. Using OSS, you can store and retrieve any type of data at any time, from anywhere on the web.

You can use API and SDK interfaces provided by Alibaba Cloud or OSS migration tools to transfer massive amounts of data into or out of Alibaba Cloud OSS. You can use the Standard storage class of OSS to store image, audio, and video files for apps and large websites. You can use the Infrequent Access (IA) or Archive storage class as a low-cost solution for backup and archiving of infrequently accessed data.

You can quickly learn about OSS by video: [Video link](#).

## 2 Benefits

### Benefits of OSS over traditional storage

Item	OSS	Traditional storage
Reliability	<ul style="list-style-type: none"> <li>Guarantees 99.99% designed service availability .</li> <li>Offers automatic scaling without affecting external services.</li> <li>Guarantees 99.999999999 % (11 nines) designed durability.</li> <li>Offers automatic redundant data backup.</li> </ul>	<ul style="list-style-type: none"> <li>Depends on hardware reliability. Traditional storage has a relatively high failure rate. If a disk has bad sectors, data may be lost and cannot be recovered.</li> <li>Manual data recovery is complex and involves a lot of time and technical resources.</li> </ul>
Security	<ul style="list-style-type: none"> <li>Provides enterprise-grade, multilevel security.</li> <li>Supports multi-user resource isolation and remote disaster recovery.</li> <li>Provides authentication and authorization, as well as whitelist, anti-leeching, and RAM account features.</li> </ul>	<ul style="list-style-type: none"> <li>Traffic cleaning service and black hole service must be purchased separately.</li> <li>Security must be implemented independently .</li> </ul>
Cost	<ul style="list-style-type: none"> <li>BGP backbone network without bandwidth restrictions. Upstream traffic is free of charge.</li> <li>No maintenance staff or hosting fees required.</li> </ul>	<ul style="list-style-type: none"> <li>Storage space is limited by hardware capacity. Manual scaling is required.</li> <li>Access speeds are slow during single or double-line access. Bandwidth restrictions are imposed. Manual scaling is required during peak traffic periods.</li> <li>Requires professional maintenance staff and high costs.</li> </ul>
Data Processing Capabilities	Provides image processing , audio/video transcoding, accelerated content delivery	Must be purchased and deployed separately.



Item	OSS	Traditional storage
	, archive services, and other value-added data services.	

### More benefits of OSS

- Easy to use
  - OSS provides RESTful APIs, a wide range of SDKs, client tools, and a web console. You can easily upload, download, retrieve, and manage massive amounts of data for websites and applications the same as using regular files in Windows.
  - The number and size of files are not limited. Unlike the traditional hardware storage, OSS enables you to easily scale up (expand) your storage space as needed.
  - OSS supports streaming upload and download, which is suitable for business scenarios where you must simultaneously read and write videos and other large files.
  - OSS offers lifecycle management. You can delete expired data in batches or transition the data to low-cost archive services.
- Powerful and flexible security
  - OSS provides flexible authentication and authorization, including STS, URL, whitelist, anti-leeching, and RAM account features.
  - OSS offers user-level resource isolation. You can also use the multi-cluster synchronization service.
- Rich and powerful value-added services
  - Image processing: Supports format conversion, thumbnails, cropping, watermarks, scaling , and other operations with a wide variety of file formats including jpg, png, bmp, gif, webp, and tiff.
  - Audio/video transcoding: Provides high-quality, high-speed, parallel audio/video transcoding capabilities for audio/video files stored in OSS. You can easily make your audio/video files compatible for different types of devices.
  - Accelerated content delivery: Content Delivery Network (CDN) can be used with OSS to speed up the delivery of content stored in OSS. This service features high stability, unlimited origin bandwidth, and easy configuration.

## 3 Functions

Before you start to use OSS, we recommend that you have basic familiarity with some important OSS concepts, including buckets, objects, regions, endpoints, and AccessKey. For more information about these concepts, see [Basic concepts](#).

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OSS provides the following functions to address your business needs in different scenarios.

How do I...?	Function description	Reference
Upload files	Before you can upload any data to OSS, you must create a bucket in one of Alibaba Cloud regions to store your data. After you create a bucket, you can upload an unlimited number of data objects to the bucket.	<ul style="list-style-type: none"><li>• <a href="#">Create a bucket</a></li><li>• <a href="#">Create folders</a></li><li>• <a href="#">Upload objects</a></li></ul>
Search files	You can search for files in buckets or folders.	<a href="#">Search for files</a>
View and download files	You can use the object URL to view and download the object, or share the object with others.	<a href="#">Obtain the object URL</a>
Delete files and folders	You can delete a single or multiple objects and folders. You can also delete fragments generated by multipart upload to save your storage space.	<ul style="list-style-type: none"><li>• <a href="#">Delete objects</a></li><li>• <a href="#">Delete folders</a></li><li>• <a href="#">Delete fragments</a></li></ul>
Control access permissions for my OSS resources	OSS provides Access Control Lists (ACLs) for permission control. ACLs are access policies that grant access permissions to buckets and objects. You can configure the ACL when creating a bucket or uploading an object, and modify the ACL anytime after the bucket is created or the object is uploaded.	<ul style="list-style-type: none"><li>• <a href="#">Set ACL bucket permissions</a></li><li>• <a href="#">Set ACL object permissions</a></li></ul>

How do I...?	Function description	Reference
Record the detailed information of requests made to my bucket	You can enable logging to automatically record the detailed information of requests made to a bucket.	<a href="#">Set logs</a>
Prevent data on OSS from being stolen by others	You can configure a referer whitelist for a bucket and configure whether to allow access requests with an empty referer field.	<a href="#">Set anti-leech</a>
Use my own domain to access the data stored in my OSS bucket	You can bind a custom domain to your OSS bucket. Then you can use the custom domain to access data stored in the bucket. You can also enable Alibaba Cloud CDN to speed up the access to the data stored in the bucket.	<a href="#">Bind a custom domain</a>
Enable my client web applications that are loaded in one domain to interact with resources in another domain	OSS provides Cross-Origin Resource Sharing (CORS) settings in the HTML5 protocol. CORS allows client web applications that are loaded in one domain to interact with resources in another domain.	<a href="#">Configure CORS rules</a>
Automatically delete objects in batches at specific time	You can configure lifecycle rules to define actions you want OSS to take during the lifetime of specific objects, for example, transition objects to another storage class, archive them, or delete them after a specified period of time.	<a href="#">Create lifecycle rules</a>
Synchronize newly created objects, object updates, and object deletions from one bucket to another bucket in a different region	Cross-region replication is the automatic, asynchronous copying of objects across buckets in different regions. Cross-region replication replicates newly created objects, object updates, and object deletions from a source	<a href="#">Create Cross-region replication rules</a>

How do I...?	Function description	Reference
	bucket to a destination bucket in a different region.	
Fetch content from the origin store	You can create back-to-origin rules to define whether to fetch origin data by mirroring or redirection. Back-to-origin rules are usually used for hot migration of data and redirect of specific requests.	<a href="#">Create back-to-origin rules</a>
Modify HTTP headers	You can set a single or multiple HTTP headers.	<a href="#">Set object HTTP headers</a>
View resource usage	You can view the real-time information about OSS service usage, such as basic system operation statuses and performance.	<a href="#">Real-time service monitoring</a>
Process images stored in OSS	You can perform different operations on the images stored on OSS, such as format conversion, cropping, scaling, rotation, watermarks, and style encapsulation.	<a href="#">Image processing</a>
Use APIs and SDKs	OSS provides RESTful APIs and SDKs in mainstream languages.	<ul style="list-style-type: none"><li>• <a href="#">API Reference</a></li><li>• <a href="#">SDK Reference</a></li></ul>

## 4 Scenarios

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OSS is applicable for the following scenarios:

### **Static/dynamic resource separation for web pages and apps**

OSS leverages the BGP bandwidth to achieve ultra-low latency of direct data download. In addition, OSS can be used with Alibaba Cloud CDN to speed up the delivery of images, audios, videos, and app files. This enhances user experience, as shown in the following figure.

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### **Media file processing in the cloud**

After you upload media files to OSS, you can use the Media Transcoding service and the Image Processing service to process them in the cloud, as shown in the following figure.

## 5 Limits

OSS has the following use restrictions:

Restricted items	Description
Archive storage	It takes one minute to restore data from the frozen state to the readable state.
Bucket	<ul style="list-style-type: none"><li>You can create a maximum of 30 buckets.</li><li>The name, region, and storage class of a bucket cannot be modified.</li></ul>
File uploading	<ul style="list-style-type: none"><li>The size of each file uploaded by console upload, <a href="#">simple upload</a>, <a href="#">form upload</a>, and <a href="#">append upload</a> cannot be greater than 5 GB. To upload a file greater than 5 GB, you must use <a href="#">multipart upload</a>.</li><li>The size of each file uploaded by <a href="#">multipart upload</a> cannot be greater than 48.8 TB.</li><li>The default bandwidth throttling of upload and download is 10 Gbit/s in Mainland China regions and 5 Gbit/s in the International, Hong Kong, Macau, and Taiwan regions. Once the throttling is reached, the DownloadTrafficRateLimitExceeded or UploadTrafficRateLimitExceeded error response is returned. If you need a higher bandwidth, <a href="#">contact your local technical support</a>.</li><li>You can upload files with same names but the existing files are overwritten.</li></ul>
File deletion	<ul style="list-style-type: none"><li>Deleted files cannot be restored.</li><li>You can delete up to 1,000 files in batches in the console. To delete more files in batches, you must use APIs or SDKs.</li></ul>
Domain name binding	<ul style="list-style-type: none"><li>You must apply for an ICP license</li><li>for your bound domain name to direct your website to servers located in Mainland China for public visits.</li></ul>

Restricted items	Description
	<ul style="list-style-type: none"><li>You can bind up to 20 domain names for each bucket.</li></ul>
Lifecycle	You can configure with up to 1,000 lifecycle rules for each bucket.
Image processing	<p>For an original image:</p> <ul style="list-style-type: none"><li>Only jpg, png, bmp, gif, webp, and tiff formats are supported.</li><li>File size cannot exceed 20 MB.</li><li>For image rotation, the width or height of the image cannot exceed 4096.</li></ul> <p>For a thumbnail:</p> <ul style="list-style-type: none"><li>The product of the width and height cannot exceed 4096 x 4096.</li><li>The length of each side cannot exceed 4096.</li></ul>
Resource bundle	<ul style="list-style-type: none"><li>It only supports regional use, not other geographic use.</li><li>Change of geographic area is not supported.</li><li>The same type of resource bundle does not support overlays, for example, two storage packages cannot be purchased at the same time segment of the region.</li><li>The number of requests and the low-frequency/archive storage do not support year-over-year charges.</li></ul>